

WHAT IS CLAIMED IS:

- 1 1. A method for fabricating a semiconductor device including
2 at least one of a ruthenium and a ruthenium oxide, comprising:
3 ashing a photo-sensitive material over the ruthenium or
4 the ruthenium oxide using a gas mixture containing oxygen gas
5 or ozone gas and nitrogen gas, wherein the percentage composition
6 of nitrogen gas is 50 % or more.
- 1 2. The method as claimed in claim 1, wherein the ashing is
2 performed by heating a substrate over which the ruthenium or
3 the ruthenium oxide is formed at a temperature of 200 °C or more.
- 1 3. The method as claimed in claim 1, wherein the ashing is
2 performed after etching an interlayer insulation film on the
3 ruthenium or the ruthenium oxide using the photo-sensitive
4 material as a mask.
- 1 4. The method as claimed in claim 1, wherein the ashing may
2 be performed after patterning the ruthenium or ruthenium oxide
3 using the photo-sensitive material as a mask.
- 1 5. A method for fabricating a semiconductor device including
2 at least one of a ruthenium and a ruthenium oxide, comprising

3 the steps of:

4 forming a film made of ruthenium or ruthenium oxide over
5 a substrate;

6 forming an interlayer insulation film on the ruthenium
7 or the ruthenium oxide film;

8 applying a photo-sensitive material on the interlayer
9 insulation film and patterning the applied photo-sensitive
10 material;

11 etching the interlayer insulation film using the patterned
12 photo-sensitive material as a mask; and

13 ashing the patterned photo-sensitive material using an
14 ashing gas provided as a mixture of a gas that contains oxygen
15 gas or ozone gas and a gas that contains nitrogen gas, wherein
16 the percentage composition of nitrogen gas is 50 % or more.

1 6. The method as claimed in claim 5, wherein the ashing is
2 performed by heating the substrate at a temperature of 200 °C
3 or more.

1 7. The method as claimed in claim 5, wherein a contact hole
2 for exposing the ruthenium film or the ruthenium oxide film is
3 formed in the step of etching the interlayer insulation film.

1 8. The method as claimed in claim 5, wherein the interlayer
2 insulation film is made of silicon dioxide.